

SECTION 13

BRIDGE ATTACHMENT PERMITS

1.13.1 GENERAL

The Department allows utility attachments to existing bridges if the proposed addition is “a practical arrangement and considered to be in the public interest”.

The following information has been established as a guide for the preparation of plans and for the review of plans for the proposed attachment.

1.13.2 LOCATION

- a. The location of a utility crossing in a structure should be selected to avoid conflict with existing utilities or future utilities for which provisions have been made. Adequate access for maintenance and inspection of the planned installation and of the structure itself must be kept in mind.
- b. Placement of utilities on bridge decks or sidewalk areas, or attachments to railings or parapets, are not permitted. Also prohibited are exposed installations at the outside faces of the structure.
- c. Existing underclearances must be preserved. The applicant must position all elements of a crossing to clear a line defined by connecting the points of intersection of the centerline of web at the bottom of the bottom flange beams flanking the installation. Familiarity with the structural framework is necessary to avoid conflicts with bearing seats, crossframes, intermediate and end diaphragms and lateral bracing.
- d. Structural integrity of the bridge components shall be preserved. The dead load of the proposed utility attachment shall not cause undue stresses.

1.13.3 INSTALLATION AND PLAN REQUIREMENTS

- a. Joints in bridge decks unusually define locations where differential movements can occur between adjacent spans resulting from temperature changes and traffic loads. Appropriate devices must be provided at these locations to accommodate similar movements in bridge attachments.
- b. Galvanized structural steel should be utilized for supports where existing structural elements cannot be used to carry loads. Sizes of proposed structural shapes should be provided.
- c. Specify the type, size and location of connections. High strength bolts (M22 preferred) shall be used. For new structures, welding to existing structural appurtenances is prohibited. Welding to bottom flanges or lower one third height of web of simply supported stringers is not permitted. Welding will also be prohibited in areas of negative moment area for continuous beams. Placement

of anchor bolts or other inserts into deck slabs is also prohibited.

- d. Pipes installed through abutment backwalls should be placed in galvanized steel sleeves set in non-shrink grout with the opening between the pipe and sleeve packed with jute or similar material to prevent leakage through the backwall.
- e. Provide ducts for electrical and communication cables.
- f. Pipes carrying liquids under pressure in trenches should be sleeved within 3 meters of abutments, walls and piers.
- g. All pipelines carrying liquids or gasses under pressure shall extend through the supporting structure without changes in alignment. Changes in alignment shall be outside the structure limits. Reactions developed at these locations should be carried by thrust blocks or other means completely independent of the bridge's structural elements.
- h. The project location should be defined on a small scale location map on which the site can be seen in relationship to major points of reference; such as, highways, municipalities, bodies of water, county lines, etc.
- i. Identification of the route, municipality, county, applicant, and proposed bridge attachment should be placed in the title block located in the lower right hand corner.
- j. Provide a plan view with a North reference arrow, an elevation and a cross section of the structure and detailing and necessary dimensions to identify and locate existing and proposed structural members that are in relationship to the bridge attachment and to verify clearances. Additional sections should be shown, as required, to completely convey the extent of the work and/or modifications proposed.
- k. The outside diameters and thickness of pipes, and weights of pipe or conduit and materials carried should be shown on the plans. If manufactured fittings, connectors, supports, etc. are used, their identity and spacing should be indicated on the plans and catalog cuts with dimensions should be traced on to the plans.